Crop Production News

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AGRICULTURE

CROPS

Editor's Comments

by Sean Miller, PAg
Provincial Specialist, Plant Disease

Welcome back to another growing season with the *Crop Production News* (CPN).

We welcome any feedback you have to help us improve the value of our publication.

Those who have requested copies of the CPN (more than 675 subscribers) will be notified by email each time a new edition has been posted on the Ministry website. If you are not already receiving a link to the newsletter in your email, you can sign up for our CPN email list using the Online Publication Sign-Up Form located at: www.agriculture.gov.sk.ca/sign-up.

For an update on provincial crop progress throughout the growing season, see the weekly Crop Report at: www.agriculture.gov.sk.ca/Crop-Report.

The spring update to *The 2013 Guide to Crop Protection* is now available on our website at: www.agriculture.gov.sk.ca/Guide_to_Crop_Protection.

Crop Production News is a bi-weekly publication prepared primarily by provincial specialists with the Crops and Irrigation and Regional Services branches of the Saskatchewan Ministry of Agriculture. It is a compilation of articles related to entomology, plant pathology, weed science, soils and agronomy issues.

Please do not use any of these articles for any other purpose without first asking the author's permission.

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Government of Saskatchewan
Ministry of Agriculture

2013 Plant Disease Surveys

by Sean Miller, PAg
Provincial Specialist, Plant Disease

Saskatchewan Agriculture's disease surveys are an important component of integrated disease management plans. The disease surveys give producers notice of potential disease problems in their regions and provide an incentive to undertake the necessary monitoring, prevention and control measures the following year.

Cereal Disease Surveys

The **Fusarium Head Blight Survey** monitors the severity and spread of fusarium head blight, as well as the *Fusarium* species responsible for infection. The information collected from the survey can also be used to provide disease control recommendations for producers. Surveyors collect cereal heads when crops are in the early milk to early dough stages. The samples are sent to the Crop Protection Laboratory for species identification and disease severity ratings.

The **Cereal Leaf Disease Survey** determines the prevalence and distribution of cereal leaf diseases, and is conducted at the same time as the Fusarium Head Blight Survey. The survey also identifies the most prominent pathogens in each region. Surveyors collect samples of flag leaves from fields within their regions. The samples are sent to specific laboratories for pathogen identification and severity ratings.

Lentil Disease Survey

The Lentil Disease Survey is conducted in early August. Disease assessments are made in the field by observing several representative plants to determine the general health of the crop and presence or absence of disease symptoms. Prevalence and severity of the following diseases are recorded: root rot, anthracnose, ascochyta blight, sclerotinia stem and pod rot, botrytis stem and pod rot, stemphylium blight and other less common diseases that may be present.

Canola Disease Survey

The Canola Disease Survey is conducted from mid- to late August by volunteer pathologists, agronomists and Saskatchewan Agriculture staff. Canola is assessed visually for diseases such as sclerotinia stem rot, blackleg, alternaria black spot, fusarium wilt, aster yellows and clubroot. Disease incidences are recorded in the field. With the producers' permission, soil samples will also be collected for clubroot DNA testing from approximately 100 fields. If you would like to volunteer a field for the 2013 Clubroot Soil Survey, please contact at sean.miller@gov.sk.ca or 306-787-4670.

Results of the 2013 disease surveys will be available to growers, and will be posted in the winter on the Canadian Plant Disease Survey website at www.cps-scp.ca/cpds.shtml. Past surveys are also available at the survey website or by contacting sean.miller@gov.sk.ca.

Colour Banding in Winter Wheat

by Mitchell Japp, PAg
Provincial Specialist, Cereal Crops

Last fall's dry weather was not ideal for the establishment of Saskatchewan's winter wheat crop. With good conditions, winter wheat would have reached the two- to three-leaf stage before the snow fell, the optimum plant stage for winter survival. Poor soil moisture in the fall limited the germination, but, even under dry conditions, winter wheat seed can imbibe moisture and vernalize. With good management and some good weather in the spring, good yields can still be achieved despite the initial limiting conditions.

During the winter months, winter wheat is very tolerant of cold temperatures. In the spring, as the soils warm up, the crop begins to deharden, making it more sensitive to cold and frost. Fortunately, there was good snow cover throughout the winter and early spring, providing an important insulating layer for overwintering winter wheat. On the other hand, the winter was six months long, which can be an added stressor on the crop, depending on conditions for the crown.

One cold-related phenomenon observed this spring is colour banding (See photo below). Colour banding occurs when warm, sunny days follow cool nights. Plant growth that occurs in the dark of night is not green but white. Chlorophyll is the pigment that makes plant leaves green. When exposed to light, the precursors to chlorophyll will start changing to chlorophyll, and the new growth turns from white to green.

Colour banding in winter wheat in the Estevan area at the end of April 2013. Environmental records indicated daily highs from 10 to 20 C and lows below 4 C.

Photo courtesy of Jeremy Carlson.

Colour banding often has no effect on yield. However, in severe cases – indicated by the colour red – the bands may become necrotic and constrict nutrient and water flow to the newest part of the leaf. The plant will die but, depending on the health of the crown, it may regrow.

Colour banding is more common in deeply seeded crops because the emerging coleoptile (shoot) will be long and the first true leaf may form inside the shoot and emerge from beneath the soil surface.

Assessing Winter Damage

Healthy crowns will usually develop from a crop seeded at the right time, allowing the plant to reach the two-leaf stage in the fall, and the plants will overwinter with limited damage. Conditions deviating from the ideal can lower the yield potential of the crop, but do not necessarily guarantee a lower yield. Winter wheat is a hardy plant, so do not make a hasty decision regarding whether to maintain or terminate a winter wheat crop. Two weeks can considerably change the look of a winter wheat crop.

If you are not the waiting type, an early assessment can be done by looking at the crown and roots. One method is to remove a few plants on a warm day and place the crowns in a warm, constantly moist environment with some exposure to sunlight. New roots and shoots should appear in a few days. Alternatively, crowns can be placed a small amount of water in a bowl covered in cellophane. Severely damaged tissue will turn brown, while healthy tissue will remain white.

These methods are just preliminary assessments. A final assessment in the field should allow one to two weeks of growth at warm, spring temperatures before a final decision is reached. If severe damage is anticipated, look for new white roots growing.

Although the wait-and-see approach is appropriate for determining stand health, best management practices for winter wheat are to apply nitrogen fertilizer by the four- to five- leaf stage. Particularly in a year like this one, applying N early will help give winter wheat an extra boost, enhance the competitive advantage of the crop and reduce the risk of yield loss.

Further information on winter wheat management can be found at
www.usask.ca/agriculture/plantsci/winter_cereals/
or
www. agriculture.gov.sk.ca/winter-wheat

Insect Update

by Scott Hartley
Provincial Specialist, Insect and Vertebrate Pest Management

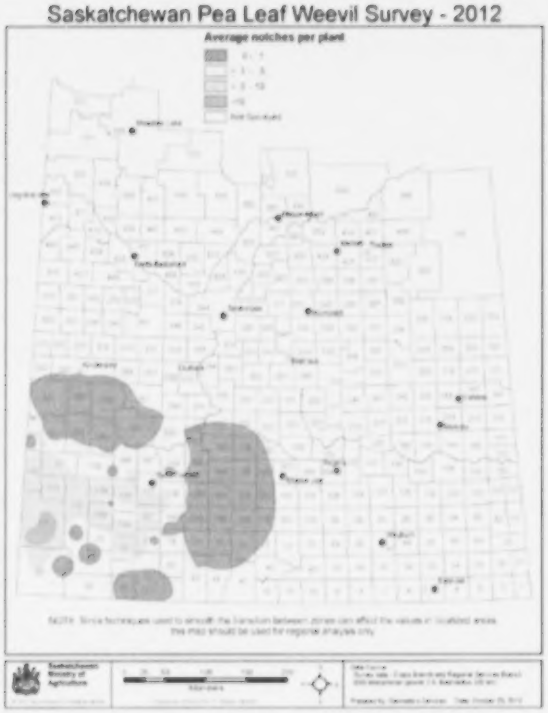
The extended winter delayed spring seeding in Saskatchewan, but also resulted in slow insect development. Insect species that overwintered in the adult stage (e.g. flea beetles, pea leaf weevils) will usually be the first to be noticed and cause damage. Others, such as wheat midge and bertha armyworm, require further development during the growing season. It is important to regularly scout fields for symptoms of damage and insect populations to determine if pest numbers or damage exceeds economic levels, and control measures are required.

Alfalfa weevils have already been reported in alfalfa stands south of Moose Jaw this year. The weevils have been on the increase over the last few years. Unfortunately, the increase in weevils has not been matched by an increase in the natural wasp parasite of the weevil, *Batheplectes curculionis*. Alfalfa weevil distribution has expanded into most areas of Saskatchewan except the west-central and northwestern regions, indicated by

surveys conducted by Saskatchewan Agriculture regional forage specialists and coordinated by Agriculture and Agri-Food Canada (AAFC) (Saskatoon). (See map above). There is more on the alfalfa weevil in the next story.

The **pea leaf weevil** is another insect that overwinters as an adult. The pea leaf weevil has only been found in southwestern Saskatchewan, although typical feeding damage (notched pea leaves) was noted across the South Saskatchewan River in the west-central region in 2012. Its range continues to move eastward in southern regions (See map on following page). The most consistent method of control for this insect is a seed treatment with an insecticide registered for the pea leaf weevil. If a seed treatment was not used and damage occurs, a foliar application of

Saskatchewan Pea Leaf Weevil Survey - 2012



an insecticide is recommended when 30 per cent of the pea plants show feeding notches on the leaves. Although the insecticide will reduce adult weevil populations, there will be little effect on larvae that feed on nitrogen-fixing nodules below the surface; therefore, there is not always a good yield response from foliar-applied insecticides.

Flea beetles overwinter as adults and start feeding on cruciferous seedlings when temperatures rise. Flea beetles do best under warm, dry conditions and have not been reported in high numbers in recent wet years. Economic infestations were noted in the northwest in 2012. Higher numbers the previous fall are the best indication of potential problems in the spring. Seed treatments are the most common method of control for flea beetles. Research at Saskatchewan Agriculture and AAFC (Saskatoon) has indicated that the current neonicotinoid seed treatments work best under warm, dry conditions, although they have a limited period of effectiveness.

The slow growing conditions in 2012 resulted in the need for foliar-applied insecticides in some cases where damage to cotyledons and young seedlings exceeded the 25 per cent action threshold.

Cutworm populations declined in most areas in 2012; however, it is still important to monitor crops for cutworms. Timing of cutworm infestations will depend on the species present. **Dingy cutworms** are one species that overwinter in a larval stage, and, as a result, they are active as soon as temperatures increase sufficiently. **Red-backed** and **pale western cutworms**, however, overwinter as eggs and tend to cause damage later. They will be smaller than cutworms that overwintered as larvae. Symptoms of cutworm feeding may be cutting of the seedlings at or below the soil surface, or above ground defoliation, depending on the species. The cutworm research projects funded by the Canola Agronomic Research Program (CARP) that commenced last year will continue in 2013. Cutworm decline is, in part, due to parasites, something the research projects are focused on due to significant numbers of parasitized cutworms found in samples submitted in 2012.

Collecting cutworms for the cutworm survey and associated research projects.

Your help is needed to source and collect cutworms.

- Larvae should be handled as little as possible and always gently.
- Include as many specimens as possible.
- Place larva plus feeding material into a **clean** container (e.g. sour cream container). Alternatively, small paper bags can be used for collecting and shipping cutworms **IF** the paper bag is protected from compaction (i.e. shipped in bubble wrap).

- Larvae require feeding material both for humidity and food, so some leaves should be added to the container. Secure the container with tape to prevent it from opening during shipment. Use a box for shipping. Paper bags will work well for those who drop off samples.
- Do not include soil with the cutworm specimen as it damages the cutworm.

Every larva must have collection data, include the following: (1) collection date, (2) collector's name, (3) collector's email or phone number, (4) nearest town, (5) GPS or legal land description of field, (6) name of host crop/plant the worm was near or feeding on, and (8) previous year's crop.

Shipping cutworms.
In Saskatchewan, drop off samples at the nearest Saskatchewan Agriculture Regional Office or at the Crop Protection Laboratory in Regina, or use priority post to ship them to the Crop Protection Lab. If priority post is used, the submitter of the sample is responsible for the mailing fees. If unsure of how to submit, contact Scott Hartley, Insect and Vertebrate Pest Management Specialist, at 306-787-4669.

Wireworm control is obtained through the use of seed treatments registered for wireworms and the specific crop. Wireworm problems were not widely reported in 2012. If wireworms are found they can be submitted to the Crop Protection Laboratory in Regina. Specimens will be forwarded to AAFC (Agassiz, B.C.) for inclusion in an ongoing Canada-wide survey of wireworm species.

The potential risk of **diamondback moths** is monitored by evaluating wind trajectories and pheromone traps set up by cooperators across the province. Data associated with wind currents is provided to AAFC (Saskatoon) by Environment Canada. There were no favourable winds earlier this spring, but in the last two weeks of May there were winds originating in the southern U.S. and northern Mexico that could carry the moths into the Prairies. Trap counts as of the end of May showed low numbers of moths or none.

Bertha armyworms are a pest to watch for in 2013. This insect is more cyclical than many, with outbreaks about every eight to 10 years, that last two-to-three years. It is likely the middle of an outbreak period for many areas of Saskatchewan. The bertha armyworm is monitored during the growing season using pheromone-baited traps that collect male moths. This information is submitted weekly by cooperators, and the data is mapped to provide an indication of risk in an area. Traps are set up in early June and monitored until approximately early August, and the cumulative moth counts provide a reasonable indication of population levels and associated risk.

Crop Protection Laboratory
346 McDonald Street, Regina SK S4N 6P6

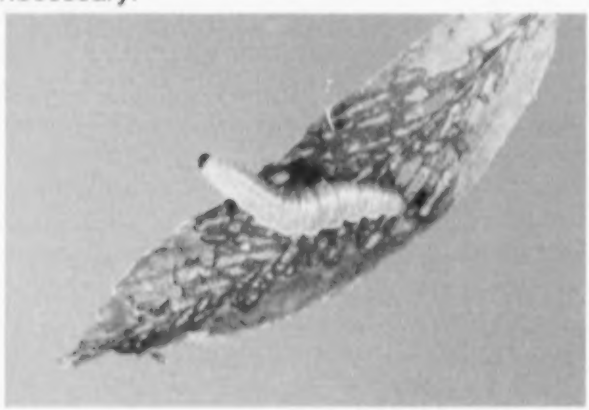
Hours: Monday – Friday, 8 a.m.-12 p.m., 1 p.m.-5 p.m.,
except on statutory holidays
Phone: 306-787-8130
Fax: 306-787-8803
E-mail: croplab@gov.sk.ca

For more information, go to www.agriculture.gov.sk.ca/Crop_Protection_Lab.

Monitor your Alfalfa Fields for Alfalfa Weevil

by Kevin France, Provincial Specialist, Forage Crops
and
Scott Hartley, Provincial Specialist, Insect/Pest Management

Producers in south-central Saskatchewan have reported an increase in adult alfalfa weevil activity this spring. It is too early to determine if they will cause any economic or production losses in 2013, but it would be prudent for producers to monitor numbers and be ready to take action if necessary.



Alfalfa weevil, fourth instar.

Photo courtesy of Julie Soroka, AAFC, Saskatoon

Alfalfa weevil populations have been on the increase in Saskatchewan over the past few years. The distribution of this insect has also spread eastward and northward since it was first identified in the southwestern part of the province.

In recent years, many of the economic infestations were reported on the eastern side of the province, but surveys of alfalfa crops from 2009 to 2012 show that the weevil can now be found throughout Saskatchewan, except for some parts in the west-central and northwestern regions.

Alfalfa weevils overwinter as adults in vegetative debris or alfalfa stubble. Once alfalfa growth begins, the weevils begin feeding and lay eggs in the alfalfa stems. When the eggs hatch in one-to-three weeks, the larvae feed on new plant growth. High larval populations will cause the alfalfa field to have a silvery appearance as green material is eaten off the leaves. Peak feeding can occur from mid-June to mid-July. After going through several development stages, the larvae fall to the soil and pupate. A new generation of adults will emerge seven to 14 days later.

In alfalfa crops grown for hay, the most cost-effective method of managing weevil damage is to cut the crop before extensive feeding damage occurs. However, in recent years, there have been situations in which larval populations have remained high, causing significant damage to the new growth and requiring chemical control. Two or more active larvae per crown or four to eight larvae per square foot may warrant insecticide application.
In alfalfa seed production where cutting is not possible, economic thresholds are related to plant growth. An insecticide is recommended for alfalfa weevils if there is one larva per stem on a 30 cm alfalfa plant, two larvae per stem on a 40 cm plant or three larvae per stem on any plant. For more information on monitoring, economic thresholds and insecticide application, refer to *The 2013 Guide to Crop Protection*.

The survey of alfalfa crops was conducted by Ministry of Agriculture regional forage specialists. Samples were processed by Agriculture and Agri-Food Canada (Saskatoon) between late June and early July 2012.

For more information on the alfalfa weevil, contact the Agriculture Knowledge Centre at 1-866-457-2377 or your local Saskatchewan Agriculture regional office.

Starter Phosphate Fertilizer is Important for June Seeding

by Ken Panchuk, PAg
Provincial Specialist, Soils
Crops and Irrigation Branch

Starter phosphate fertilizer is needed for seeding in June so that the crop has an improved chance for catch up growth during the longest days of the growing season. Phosphate is needed for early, healthy root development, and is part of the package of starting a uniform, healthy stand. Bumping the seeding rate up a bit, combined with shallow seeding depth and an adequate amount of starter phosphate, will be the best strategy for hastening maturity. Every day of gain in maturity reduces the risk of the first fall frost damaging yield and quality.

Phosphate needs to be banded with or very near the seed to be effective as a starter fertilizer. Also, keep the rate of phosphate within the limits of the safe rates of phosphate applied with the seed. Exceeding the safe rate for a crop will reduce plant numbers. This works against the early maturity strategy when seeding in June. See the 'Guidelines for safe rates of fertilizer placed with the seed' fact sheet. Phosphorus, which is essential for cell division and energy transfer within plant tissue, becomes very important during rapid growth. Sluggish plants in June can translate into delayed maturity.

A regular soil testing program helps you identify nutrient deficiencies and nutrient level trends, and is an important component of the 4R nutrient stewardship system for profitable crop production.

Crop Protection Lab Update

by Cecilia Peluola, PAg
Supervisor, Crop Protection Laboratory

The first submissions of the year arrived at the Crop Protection Laboratory in early May.

Disease/Environmental Damage: Diseases diagnosed in greenhouse tomato and cucumber included septoria leaf spot (*Septoria lycopercisi)* and downy mildew (*Pseudoperonospora cubensis)* in greenhouse cucumber. Pink snow mould (*Microdochium nivale)* was cultured on winter wheat. Diseases diagnosed in peas included root rot (likely associated with *Fusarium* spp) and ascochyta foot rot. Environmental damage is the main disorder associated with spruce samples submitted to the lab. For further information, see the Environmental Damage on Spruce Trees article by Glen Sweetman in the June 22, 2012, edition of the *Crop Production News* (www.agriculture.gov.sk.ca/cpn120622).

Insect: Crane fly larvae (*Tipulidae*) and Dance fly larvae (*Empididae*) were submitted from a winter wheat field sample. Silken fungus beetles (*Cryptophagidae*) were also submitted in May. However, none of these insects pose a threat to field crops; they feed on dead and decaying organic matter or smaller insects. Crane fly larvae (a.k.a. leather-jackets) can occasionally be a pest in turf grass.

Weed: One weed sample was submitted from a hay crop and identified as cicer milkvetch (*Asagalus cicer)*.

Two per cent Liquid Strychnine Concentrate Container Disposal

- Two per cent Liquid Strychnine Concentrate containers are accepted at all Pesticide Container Collection locations in Saskatchewan.
- Farmers should properly rinse the containers.
- Procedures for rinsing are available on the CleanFarms website: www.cleanfarms.ca.

Clubroot: Testing of the soil samples for clubroot from the Canola Disease Survey will begin this year.

New faces at the lab: We welcome Brianna Brown, who joined the laboratory as Plant Health Technician filling in for Jaclyne Shiplack. Brianna is not new to the branch, as she previously worked as the Dutch elm disease (DED) and Crop Pest Technologist summer student. Two summer students from the University of Regina also join the lab: Kaila Garchinski and Janessa Mann. Kaila will be working as the DED Technician and Janessa as an Administrative Technician.

Agriculture Knowledge Centre's Crop Questions of the Week

by Brent Flaten, PAg, CCA
Integrated Pest Management Specialist

The top three questions this week at the Agriculture Knowledge Centre have been in the areas of pre-seed burnoff, in-crop herbicides and potential for top-dressing fertilizer.

Due to a combination of high winds, rain and a compressed seeding window, some producers went ahead and seeded without a pre-seed burnoff and are looking at the possibility of a post-seed, pre-emergent burnoff. This can be risky depending on whether ground crack has occurred. Ground crack is when the crop is just starting to emerge through the ground. The Crop Development Centre did a study and found that spraying glyphosate at ground crack resulted in a 10-per-cent stand reduction in wheat. Spraying only 24 hours after ground crack resulted in a 10-per-cent yield reduction in wheat and a 20-per-cent yield reduction in lentils. Remember: under good growing conditions, crops can emerge quickly. If the crop is starting to emerge, then waiting to spray herbicides in-crop is the way to go. Check the *2013 Guide to Crop Protection* for herbicide options. Keep in mind that there are limited options, particularly in cereals, when the crop is in the one- to two-leaf stage.

After seeding, assess crop stand establishment. Poor plant stands can be a result of a single or a combination of factors. Scraping back the soil when the crop is emerging can reveal underground symptoms of deep seeding, surface crusting or seedling blights. Seedlings can be killed by early season insects such as cutworms, wireworms or flea beetles. Damaged seedlings can dry up and disappear quickly, so frequent field scouting is critical to determining the cause and possible solutions to establishment issues. Spraying for early season insect pests can rescue the crop. If crop establishment is poor, a decision needs to be made whether or not to re-seed.

Repeated in-crop scouting for weed, disease and insect issues is necessary to protect the crop once it has established. Before applying pesticides, consider the economic thresholds and the best time for maximum control. After spraying a pesticide, do a post-spray audit to assess how the pesticide performed. For example, producers should scout the field for both weed control performance and crop injury issues. Typically, scouting should occur one or two weeks after application. If the weeds are not completely dead, look for symptoms of herbicide activity such as yellowing, purpling, twisting, cupping or bleaching. Timely post-spray audits may give producers enough time to perform a rescue treatment, if necessary. Be aware of field re-entry restrictions on certain insecticides.

Land rolling to push down rocks and crush soil lumps helps with the harvesting of pulses. Land rolling of chickpeas after

emergence is not recommended due to potential crop injury and the spreading of disease. With peas and lentils, rolling is best done prior to emergence; however, it can be done up to the fifth- to seventh-node stage of the crop. If peas and lentils have emerged, rolling can be done but the crop needs to recover for three or four days before spraying a herbicide. This can be difficult since herbicide applications must be done when the crop is young too. For example, Odyssey can be applied in the one- to six-above-ground-node stage for field peas and the one- to nine-above-ground-node stage for Clearfield lentils, whereas Sencor is best applied on lentils in the one- to four-above-ground-node stage. If the crop has not emerged, land rolling should not be attempted when the soil is too moist, as this may result in soil crusting and affect crop emergence. If the crop has emerged, try to roll on a sunny afternoon when the plants are dry and supple.

With peas and lentils, land rolling is best done prior to emergence.

Photo courtesy of Saskatchewan Agriculture archives

There are some interesting tools and information in the *2013 Guide to Crop Protection* beyond the listing of crop protection products, which include:

- Phone numbers for Saskatchewan Agriculture's Regional Offices, the Agriculture Knowledge Centre in Moose Jaw, the Crop Protection Lab in Regina, major poison control centres in Saskatoon and Regina, the toxicology centre in Saskatoon and Saskatchewan Environment's spill reporting phone number.
- The pesticide index (page 5) is a handy reference to show you what page to find product information on. With more generic herbicide trade names in the marketplace, products with the same active ingredient are grouped together under the active ingredient name.
- A guide to correctly identifying crop and weed staging (which is critical for good weed control and crop tolerance), spray decision guidelines and yield loss tables for various weeds in different crops.
- The weed resistance management section contains a list of herbicides in their respective modes of action groups, weed resistance identification guidelines and a table of herbicide-resistant weeds in Western Canada.
- A weed control table section (page 44) includes control ratings of various weeds for registered herbicides in different crops.
- A special weed problem section (page 55) contains herbicide options for specific difficult-to-control weeds, and a table regarding the effect of rainfall on herbicide efficacy.
- At the front of the foliar fungicides, seed treatment and insect control sections, there are tables of various diseases and insects, and which products can be used to control them. Economic thresholds for various insects by crop are also included in the insect control section.

The best way to apply nitrogen (N) and sulphur (S) fertilizer at seeding is by placing the fertilizer in a side band or mid-row band. If this is not possible, place as much as you can at this time and leave the balance for broadcasting or dribble-banding later. This will give the crop sufficient nutrients as early as possible to establish a healthy stand. The balance of the N and S should be applied as early as possible, typically within four to five weeks of seeding. Delayed topdressing may result in the crop showing symptoms of N and/or S deficiency, leading to poor yield and quality.

Early symptoms of N deficiency in canola include stunted plant growth and yellowing of leaves starting with older leaves. Sulphur deficiency symptoms in canola and mustard include interveinal yellowing of newer leaves, spindly growth, upward cupping of leaves, purpling on the underside and fringes of leaves, and delayed development.

If you decide to split your N and S fertilizer, use a sulphate form of S fertilizer (e.g. ammonium sulphate [21-0-0-24]) for broadcasting. With regards to N, use granular urea (46-0-0) or liquid urea ammonium nitrate (28-0-0). If the weather forecast shows no precipitation in the next few days, consider treating the N fertilizer with Agrotain to slow the breakdown and gassing off of urea, or use a polymercoated urea (however, polymer-coated urea may take longer to release the N for crop uptake).

CROPS DIAGNOSTIC SCHOOL 2013

A hands-on approach to advance your agronomic knowledge

Insect scouting and identification
Weed identification
Fertility
Nodulation in pulses

Disease scouting and identification
Crop establishment
Diagnostic exercise
Herbicide injury symptoms

Swift Current
July 23 or 24
Location: Semiarid Prairie Agricultural Research Centre
Time: 8 a.m. registration, 8:30 to 4:30 Diagnostic School
Cost: $125

Indian Head, SK
July 30 or 31, 2013
Location: Indian Head Agricultural Research Foundation
Time: 8 a.m. registration, 8:30 to 4:30 Diagnostic School
Cost: $125

To register:
Visit www.prairiecca.ca; or
Contact Sherrilyn Phelps, Regional Crops Specialist, North Battleford at 306-446-7475.

The Crop Production News is a publication of the Crops and Irrigation Branch, Saskatchewan Ministry of Agriculture
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